

## ABSTRACT OF THE DISCLOSURE

Disclosed is a method for producing a transparent and homogenized polymeric sol of a calcium phosphate compound, 5 containing apatite and having excellent wettability and bioactivity, according to a sol-gel synthesis, and a method for coating the polymeric sol on a metal implant, in which the polymeric sol is coated on the metal implant and then heat-treated to form a dense coated layer strongly bonded to 10 the metal implant. The polymeric sol is obtained by process of preparing a calcium salt solution, containing calcium ethoxide dissolved in organic acid, and a phosphate solution, containing triethyl phosphite or triethyl phosphate dissolved in the organic acid, mixing the calcium 15 salt solution with the phosphate solution to produce a mixed solution, and aging the mixed solution.